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U.S. Environmental Protection Agency

Renewable Energy Marketing Conference
December 4, 2006

Accounting for Purchases of Green Power in Corporate GHG Inventories and Using it to Meet GHG Reduction Goals

What is Green Power?

Green Power is a marketing term for electricity that is generated from environmentally preferable renewable energy sources such as solar, wind, geothermal, biomass, biogas, and low-impact hydro

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How Can I Buy Green Power?

Purchase Options

- On-Site Generation
- Electricity Delivered Over the Grid
  - either existing utility (green pricing) or competitive supplier
- Renewable Energy **Certificates** (RECs)
  - market-based commodity designed to facilitate transactions between buyers and sellers of renewable electricity
  - provides proof that 1 MWh of renewable electricity has been generated; also allows purchaser to make some statements regarding associated environmental attributes

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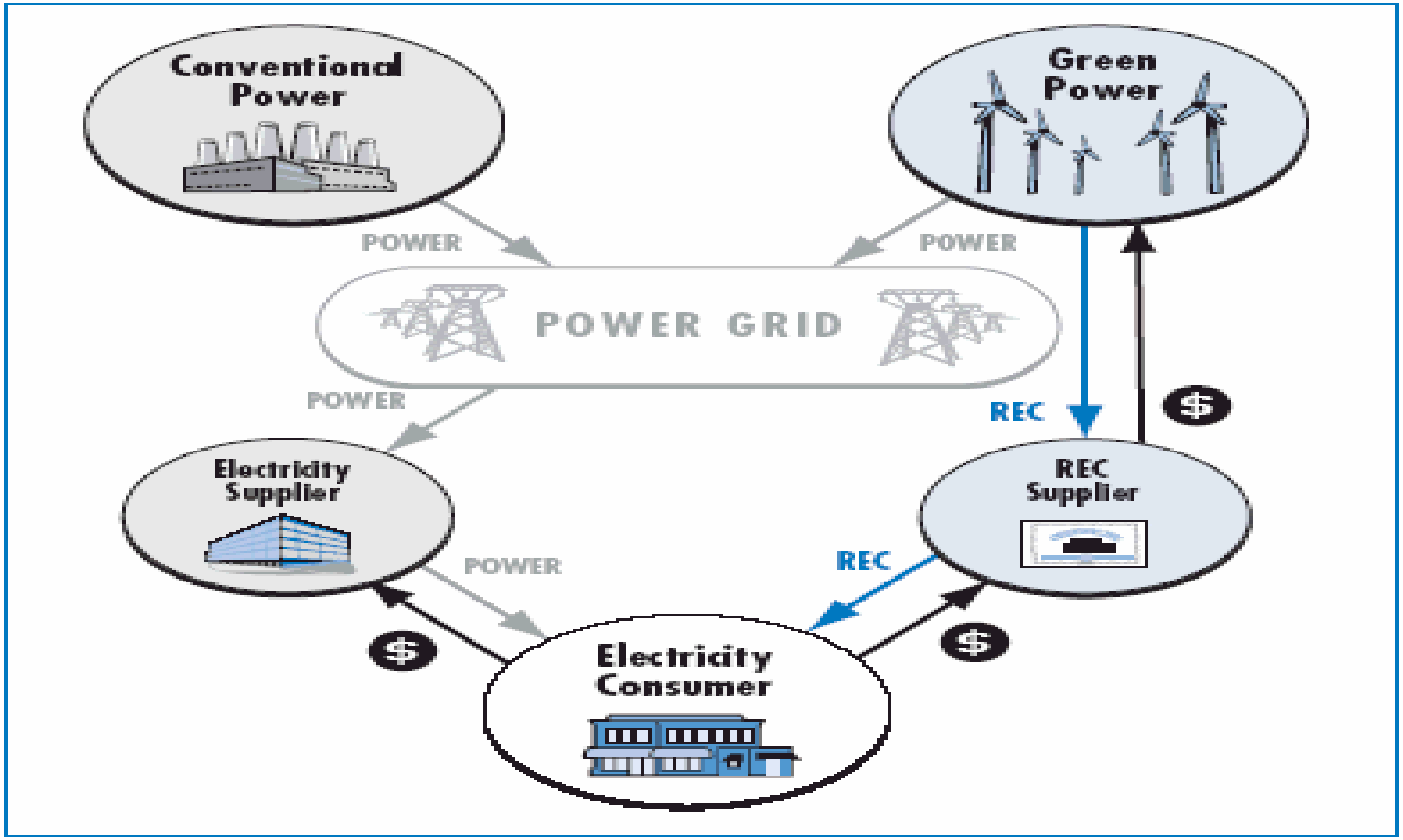
What are RECs?



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Different “Markets” for Green Power

Regulatory markets	**“Sophisticated” voluntary markets**	**Consumer voluntary markets**

cap & trade (allocation, set-aside, output standards, offsets)

“carbon neutral” statements

“green” statements

“emissions savings” statements

RPS

“non-emitting” electricity statements

“offset” emissions

performance standards

GHG inventory adjustment

resource conservation

fuel price hedge

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What is Climate Leaders?

- Climate Change is important strategic issue for companies
- **Climate Leaders** works with companies to develop long-term comprehensive GHG management strategy
- Effective corporate climate strategy, road-tested with **>100 partners** from every major sector
- 3 critical components to **credible climate strategy**
  - Complete Corporate-Wide GHG Inventory
  - Develop Inventory Management Plan (IMP)
  - Set Corporate-Wide GHG Reduction Goal
- Public reporting important consideration as well

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The Company We Keep

Green Mountain Energy
AEP American Electric Power www.aep.com
SC Johnson
United Technologies
AMD
Tenneco Automotive Our mission is GO:
Exelon
Johnson Controls
Caterpillar®
melaver, inc.
Ecolab
The Collins Companies
St. Lawrence Cement
3M
Fairchild Semiconductor®
Interface
Lockheed Martin
Holcim
Campbell's
IBM
Sun
Lafarge North America
Oracle
ecoprint®
Alcoa
Boise
American Water
Staples
Sonoma Wine Co
Marriott Hotels & Resorts
GE
DuPont
bp
Polaroid
Sterling Planet
Tyson
Tyson Foods, Inc.
Rockwell Collins
GM
Gap Inc.
Miller
Alcan
The Document Company Xerox
Roche
Agilent Technologies
USS
B.A.C.
Shaklee Creating Healthier Lives™
Novelis
Fetzer Vineyards
Steelcase
Frito Lay
Rutherfoord Risk Management and Insurance Professionals
Calpine
Unilever
Haworth change by design
Johnson & Johnson
Bank of America
The Hartford
NiSource
citigroup
Mack
Target
Baxter
casella waste systems inc.
Kimberly-Clark Corporation
Kodak
we energies
FPL Group
Noble
HSBC
Hasbro
ST
PSEG
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Pfizer
International Paper
Ball
NREL
Air Products
CSG Conservation Services Group
Coors
intel
North Bay Construction
Raytheon
QuadGraphics
Praxair
Abbott A Promise for Life
Volvo
First Environment

Using Purchases of Green Power to Meet Climate Leaders' Objectives

- Support voluntary green power purchases as a corporate environmental strategy
- Provide a straightforward, transparent method of accounting for these actions
- Build upon Climate Leaders' existing GHG inventory methodology

Accounting for Purchased Electricity

- Categorized as **indirect emissions**

- Estimated CO_2 Emissions =
  Electricity (MWh) X Emission Rate (#/MWh)

- Emissions rate
  - From eGRID database
  - Average, annual, regional
  - Vary substantially (3x) by region

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Accounting for Green Power Purchases

Treated as adjustment to **indirect** emissions

- Emissions inventory **line-item** adjustment
  - "Contractual" reality of Green Power purchase
  - Not "physical" reality of emissions sources
- Not considered an "offset" for CL purposes
  - Technical issue: defining regulatory additionality test
  - Policy issue: double counting of "avoided emission"
  - Defining performance benchmark additionality approach & crediting baseline has precedent in CL draft offset protocols

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What is an offset?

"**offset**" is something that counterbalances, counteracts, or compensates for something else; compensating equivalent

"**An Offset"** is a greenhouse gas mitigation project that results in emission reductions and/or removals, as measured against a baseline, that occurs outside the organizational boundary of the entity of concern

Accounting for Green Power Purchases

CO_2 Impact of Green Power Purchase =
Green Power (MWh) X Emission Rate (#/MWh)

- Emissions rate based upon average, regional eGRID factor **from region Green Power generated**
- This becomes line item adjustment to indirects

Key Implication

- If Green Power is generated from same region as electricity purchase, effect is to “avoid” emissions 1:1
  - i.e., 1 MWh “avoids” emissions from 1 MWh purchased
- If Green Power is generated from outside the region it’s not that simple

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Accounting for Green Power Purchases

- Green Power purchases are "contractual" not "physical" reality, so not inherent part of corporate GHG inventory – must be adjustment
- Like offsets, credibility/transparency important
  - Must be incremental to government mandates (e.g. RPS)
  - Eligibility (resources, "new", same year as inventory)
  - Double counting restrictions (retirement, attestation)
  - No netting in GHG inventory (line item adjustment)
- Certified green power purchases help ensure all criteria are met

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"Offset" Adjustments for Certain Green Power Projects

- Certain types of green power projects (generally non-grid related) may require more rigorous baseline
  - Non-grid connected renewables
  - Direct emissions reductions (i.e. captured methane)
  - Some biomass projects (i.e. coal co-firing)
- These should be treated under Climate Leaders offsets provisions
  - Draft project protocols for landfill gas, manure management (anaerobic digester) & boiler replacement are available on our website – others to be added soon

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